

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 11, 2006

In Reply Refer To: WTR-7

Robert W. Hoff, President
Medallic Art Company
80 Airpark Vista Blvd.
Dayton, Nevada 89403

Re: July 19, 2006 Clean Water Act Inspection

Dear Mr. Hoff:

Enclosed is the August 31, 2006 report for our July 19 inspection of Medallic Art Company. Please submit a short response to the findings in Sections 2 through 5 of this report, to EPA, Lyon County, and the Nevada Department of Environmental Protection, by **October 30, 2006**.

The main findings are summarized below:

- 1 Medallic Art qualifies as a new source metal finisher subject to the Federal metal finishing standards. Lyon County has not yet issued its own permit.
- 2 The treatment on-site is equivalent in design to the models used in setting the standards. As a result, wastewater discharges are expected to consistently comply with the Federal standards as long as all regulated wastewaters undergo treatment.
- 3 A sampling point needs to be established to account for and to allow the sampling of all process-related wastewater discharges to the sewers. A final discharge holding tank could serve as the sampling point and would allow mixing prior to discharge.

As we discussed at the inspection, EPA intends to follow-up this report with an Administrative Order that establishes the interim requirements in effect until Lyon County can issue its own permit. I certainly appreciate your helpfulness extended to me during this inspection. I remain available to Lyon County and to you to assist in any way. Please do not hesitate to call me at (415) 972-3504 or e-mail at arthur.greg@epa.gov.

Sincerely,

Original signed by:

Greg V. Arthur

Greg V. Arthur
CWA Compliance Office

Enclosure

cc: Joe Maez, NDEP
Skeet Sellers, Lyon County



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Medallic Art Company
80 Air Park Vista, Dayton, Nevada 89403
40 CFR 433 – New Source Metal Finishing

Treatment Works: Lyon County Utilities Department
South Dayton Valley Wastewater Treatment Plant
(No NPDES Permit - Nevada Permit NEV10017)

Date of Inspection: July 19, 2006

Inspection Participants:

US EPA: Greg V. Arthur, Region 9, CWA Compliance Office, (415) 972-3504

State of Nevada: Joe Maez, NDEP, Bureau of Water Pollution Control, (775) 687-9431
Steve McGoff, NDEP, Bureau of Water Poll Control

Lyon County: Skeet Sellers, Utilities, Wastewater Supervisor, (775) 246-6220

Medallic Art: Robert W. Hoff, President, (775) 246-6000

Report Prepared By: Greg V. Arthur, Environmental Engineer

September 11, 2006



1.0 Scope and Purpose

On July 19, 2006 EPA, the Nevada Department of Environmental Protection (“NDEP”), and Lyon County conducted a compliance evaluation inspection of Medallic Art Company in Dayton, Nevada. The purpose was to ensure compliance with the Federal, State and local regulations covering the discharge of non-domestic wastewaters into the sewers under the Clean Water Act and the Nevada Revised Statutes. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct Federal, State and local standards at correct sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Medallic Art qualifies under the Clean Water Act as a significant industrial user (“SIU”) within the Lyon County Utilities sewer service area. Lyon County operates the South Dayton Valley wastewater treatment plant under a State of Nevada ground water permit. It does not operate under an NPDES permit because the wastewater treatment plant discharges to ground waters and to a golf course for reclaim. Lyon County Utilities does qualify under the Clean Water Act as a publicly-owned treatment works (“POTW”) subject to the Federal regulations for pretreatment and sludge in 40 CFR 403 and 503. The inspection participants are listed on the title page. Arthur conducted the inspection of Medallic Art on July 19.

1.1 Process Description

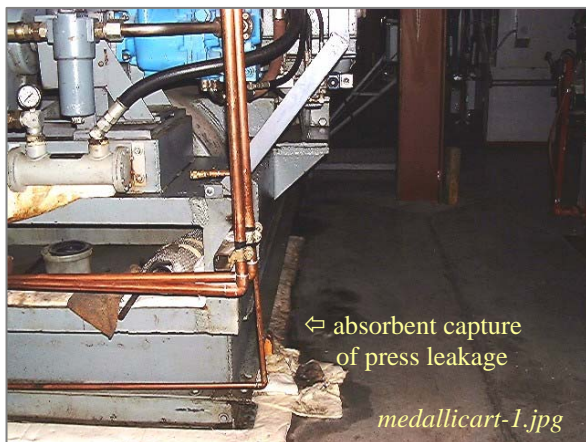
Medallic Art manufactures award medallions, such as the Peabody award, and other pieces of commemorative metal art work. The award medallions are manufactured through die striking and coining of metal strip or coil. Most award medallions are made from brass or silver, but some are also made from gold, nickel-brass, or copper. The wood and plastic bases for the awards are purchased off-site. The operations involve rolling heavy gauge coil to smaller gauges, silver casting billets from bullion, billet extrusion of silver strip, stamping blanks, hydraulic press coining, ammonia-atmosphere annealing, vibratory steel-shot burnishing, hand deburring, hand die cleaning, lathe turning, metal finishing, and mechanical or laser (not chemical) engraving. The metal finishing steps involve antiquing through chemical oxidization, and pumice polishing. The antiquing line consists of three ~200 gallon tanks. The steps comprise chemical oxidation with a cupric sulfate/selenium sulfuric-acid solution, followed by first- and second-stage static rinses. *See* photos on the next page.

Tank #	Volume	Antiquing Line Tank Description	Disposal Method
Tank 1	~200 gals	chemical oxidation	additions only since start-up
Tank 2	~200 gals	1° static rinse for Tank 1	returned to T1 as make-up
Tank 3	~200 gals	2° static rinse for Tank 1	returned to T2 as make-up

Medallic Art owns the artwork and awards it makes. An inventory of tooling and coining dies are maintained on-site, to be used to in the custom manufacturing of the awards once a customer places an order, often years or even decades after the last order. Medallic Arts



started business in 1903. Operations at this facility began in 1997. Medallic Art discharges non-domestic wastewaters to the Lyon County domestic sewers through a single sewer connection. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection. *See* Appendix 1.



*Photo: Extrusion of Silver Billet
Taken By: Greg V. Arthur
Date: 07/19/06*



*Photo: Chemical Oxidation Antiquing Line
Taken By: Greg V. Arthur
Date: 07/19/06*

1.2 Facility SIC Code

Medallic Art is assigned the SIC code for metal stamped products not used in machinery or transportation (SIC 3469).

1.3 Facility Wastewater Sources

Medallic Art discharges wastewaters to the sewers from pumice polishing, vibratory burnishing, shop clothes washing, reverse osmosis reject, and zamboni floor cleaning. Medallic Art also generates other waste streams that do not discharge to the sewers. In particular, the antiquing line returns spent static rinse waters as make-up, and has not yet generated a spent solution for disposal. Hydraulic press leakage from silver extrusion is caught by absorbent for off-site reclaim and silver castings are not water quenched but rather air quenched. Annealing uses a closed-loop cooling water heat exchanger system that is also air cooled. Hydraulic coining press spent oils are collected for off-site reclaim. Finally, metals scrap is also collected for off-site reclaim. *See* Appendix 1.

1.4 Facility Process Wastewater Composition

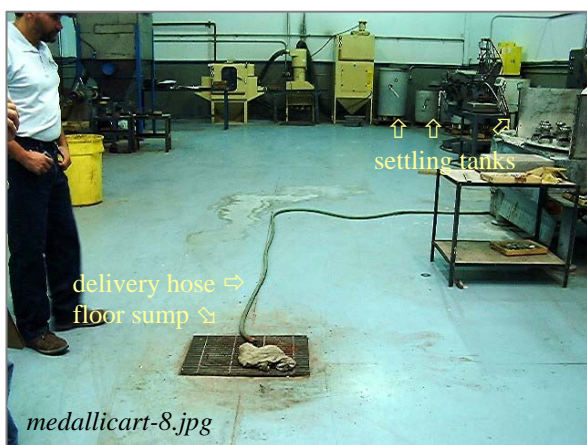
The process wastewaters listed in section 1.3 above would be expected to contain silver, iron, chromium, copper, lead, nickel, and zinc, as well as suspended solids from pumice polishing and deburring, salts, surfactants, and oil and grease and other pollutants cleaned-off of parts.



1.5 Facility Process Wastewater Treatment

Medallic Art provides on-site treatment for the pumice polishing tail waters. All other wastewaters either discharge without treatment or are disposed of in some other way. The pumice polishing tail waters first drain through three small settling tanks. The settling tank decant drains to a floor sump that is pumped to a small solids removal treatment unit. The treatment unit comprises a 300 gallon batch treatment tank for metals precipitation and settling followed by a steel-wool cementation canister. The batch treatment solids feed through a small filter press with the filtrate also passed-through the steel-wool cementation canister. The batch treated pumice polishing wastewaters discharge to a service floor drain along with work sink drainage, mop water, shop clothes washer tail water, RO reject waters, and very rarely (~1/year) discharges of vibratory burnishing tail water. Filter press cake and spent steel-wool cementation cartridges are off-hauled to a landfill.

The service floor drain near the shop clothes washer is the only identified non-domestic sewer connection. *See* Appendix 1.



above left

Photo: First-Stage Settling to Floor Sump

Taken By: Greg V. Arthur

Date: 07/19/06



above right

Photo: Second-Stage Batch Treatment Unit

Taken By: Greg V. Arthur

Date: 07/19/06



below right

Photo: Sewer Connection

Taken By: Greg V. Arthur

Date: 07/19/06

Operational Controls – The batch treatment employs two design controls that improve performance. Foremost, batch operations allow pH testing prior to release to determine whether the metals precipitation step has reached its end-point. The pre- and post-settling steps also increase the removal of solids although settling improves with flocculation or coagulation.



On the other hand, the steel-wool cementation step cannot treat below 1 mg/l silver and the batch treatment unit is not used to handle other potentially metals-bearing wastewaters such as vibratory burnishing tail water and mop waters, even though there is available capacity.

1.6 POTW Wastewater Treatment

State and Federal Legal Authorities – Lyon County operates the South Dayton Valley wastewater treatment plant under the authority of NDEP permit NEV10017 for the discharge of treated wastewater for reclaim and to the ground water. Lyon County does not possess a Federal NPDES permit issued under the Clean Water Act because the treated wastewaters do not discharge to surface waters. Nevertheless, Lyon County does qualify as a publicly-owned treatment works (“POTW”) under the Federal definition in 40 CFR 403.3(o) because the wastewater treatment plant treats mixed domestic and non-domestic wastewaters and its sludges are regulated under the Clean Water Act by the Federal regulations in 40 CFR 503.

POTW Configuration – The South Dayton Valley wastewater treatment plant consists of two treatment trains: a sequencing batch reactor ("SBR") and extended aeration lagoons. The City of Dayton generates an average of 220,000 gpd of domestic sewage. The domestic sewage feeds at a constant 140,000 gpd rate into the SBR. The remaining domestic flows are diverted through a splitter to the extended aeration lagoons. The SBR provides aerobic degradation, nitrification, and denitrification. In addition, the Dayton Valley business park generates an average of 60,000 gpd of process-related wastewaters and domestic sewage. Business park wastewaters, excess domestic sewage from city averaging 80,000 gpd, and the aerobic digester sludge from the SBR feed into the first of four lagoons. Primary Ponds #1 and #2 are aerated lagoons in series. Secondary Ponds #A and #B are facultative lagoons operated one at a time. The facultative lagoons discharge without chlorination to a rapid infiltration basin. The SBR discharges without chlorination to a golf course for reclaim.

1.7 State and Local Legal Authorities

There are no local or State permits in effect directly regulating the discharge of non-domestic wastewaters from Medallic Art to the Lyon County sewers. However, a State permit issued to Lyon County indirectly affects the discharge from Medallic Art. The State permit imposes ground water quality discharge limits upon the city sewage treatment plant and the Federal sludge standards to the disposal of city sewage treatment plant sludge.

Ground Water Permit for Lyon County - Permit NEV10017 does not require Lyon County to obtain an approved pretreatment program. This is in keeping with the Federal regulations in 40 CFR 403.8(a) that allow for, but do not mandate, States or EPA to require small POTWs with design capacities under 5.0 mgd to obtain approved pretreatment programs. The permit also does not impose any pretreatment provisions. NDEP has the authority to assume some or all of the functions of the pretreatment program under 40 CFR 403.10(e,f). NDEP has recommended that Lyon County obtain an approved pretreatment program. Lyon County has drafted a sewer use ordinance that has been reviewed by EPA but has not as of yet adopted it into municipal law.



Sewer Discharge Permits for Metallic Art - Lyon County cannot issue its own local industrial user permits until the ordinance is adopted and the pretreatment program is funded by the Lyon County supervisors. NDEP has not issued a site-specific ground water permit that extends the Nevada revised statutes to an industrial discharger into a sewage treatment plant regulated under a State ground water permit.

1.8 Photo Documentation

Arthur took 11 digital photos during this inspection, recorded as the jpeg files named *metallicart-1.jpg* through *metallicart-11.jpg*. Those not published in this report are duplicates or unviewable.

1.9 Compliance Sampling

There currently is no identified location that could serve as an overall compliance sampling point for the non-domestic wastewaters. Hypothetically a compliance sampling point could be established that accounts for all wastewater discharges into the service floor drain. This would entail the installation of a sample box or final discharge holding tank. The hypothetical final compliance sampling point is designated for the purposes of this report IWD-MA1. There is no sample record for IWD-MA1.



2.0 Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, State groundwater, and the local limits (where they exist) must be applied to the sewered discharges from industrial users. (40 CFR 403.5 and 403.6).

Summary

The Federal categorical pretreatment standards for metal finishing in 40 CFR 433 apply to all process wastewater discharges from Medallic Art through IWD-MA1. Lyon County has not issued its own enforceable sewer discharge permit. However, Medallic Art is subject to the self-implementing authority of the Federal metal finishing standards in 40 CFR 433 and the national prohibitions in 40 CFR 403.5(a)(b). In addition, once Lyon County obtains pretreatment program approval, its local limits would be technically-based on the State ground water limits and Federal sludge standards that apply to the South Dayton Valley wastewater treatment plant. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection. *See* Appendix 2.

Requirements

- The Federal standards for new source metal finishing in 40 CFR 433 must be applied to the process-related discharges from Medallic Art.
- A sampling point must be established to account for all process-related discharges.
- Any permit must prohibit dilution as a substitute for any treatment necessary to comply with Federal standards, as well as prohibit the bypassing of any treatment necessary to comply with either Federal standards or local limits.
- Any permit must apply technically-based local limits derived from the regulatory requirements that now apply to the South Dayton Valley wastewater treatment plant.

Recommendations

- Medallic Art should install a final discharge tank large enough to hold an average day's worth of wastewater and establish the sample point there.

2.1 Classification by Federal Point Source Category

Medallic Art qualifies as a metal finisher subject to the Federal metal finishing standards in 40 CFR 433. Federal standards are self-implementing which means they apply to regulated waste streams whether or not they are implemented in a permit. The Federal rules in 40 CFR 403.6 define domestic sewage and non-contact wastewaters to be dilution waters. Medallic Art does not qualify under the Federal precious metals forming standards because 40 CFR 471 Subpart D applies only to the discharge of certain specified wastewaters related to the



forming of silver and silver alloys, and none of these wastewaters are generated on-site for discharge to the sewers. The specified wastewaters include direct chill casting contact cooling water, heat treatment contact cooling water, and surface treatment (of silver) spent baths. Medallic Art does not qualify under the Federal copper forming standards because 40 CFR 468 Subpart A also only applies to discharges of certain specified wastewaters.

New or Existing Sources – Medallic Art qualifies as a new source because it was constructed after the August 31, 1982 promulgation date of the rule.

2.2 Local Limits and National Prohibitions

Local limits and national prohibitions are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants, treatment plant sludges, and their receiving waters from adverse impacts. Generally, technically-based numerical local limits supplant national prohibitions and any site-specific State limits. *See* Appendix 2 for the national prohibitions and local limits that apply.

National Prohibitions – For POTWs to surface waters, the national prohibitions in 40 CFR 403.5 prohibit discharges that can cause the pass-through of pollutants into the receiving waters, operational interference of the treatment works, sewage sludge contamination, sewer worker health and safety risks, fire or explosive risks, and corrosive sewer damage. Pass-through and interference, however, as defined in the Federal regulations only occur when NPDES permit limits are violated. So with no NPDES permit for Lyon County, the national prohibitions cannot prohibit discharges that result in violations of the NDEP ground water permit either through pass-through or operational interference. They do however prohibit discharges that cause unpermitted discharges or bypasses to surface waters.

Local Limits – However, local limits should protect the POTW from all adverse impacts including violations of State permits. In this case, technically-based local limits would be approved if they restrict discharges that can cause the pass-through of pollutants and operational interference resulting in violations of the NDEP ground water permit for Lyon County. Local limits still need to be adopted based on the performance of the sewage treatment plant and the current regulatory requirements in the NDEP permit and the Federal sludge regulations. They would apply to all non-domestic discharges in its service area upon adoption.

2.3 Federal Categorical Pretreatment Standards New Source Metal Finishing - 40 CFR 433.17

40 CFR 433.17	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO
daily-maximum (mg/l)	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	0.86	2.13
month-average (mg/l)	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	0.32	-

Applicability - Under 40 CFR 433.10(a), the metal finishing standards apply to the process wastewaters from Metallic Art because the facility's operations involve antiquing (a form of etching and chemical coating). The metal finishing standards "... apply to plants that



perform ..." the core operations of electroplating, electroless plating, etching, anodizing, chemical coating, or printed circuit board manufacturing and they extend to other on-site operations, such as deburring, polishing, and machining associated with metal finishing and specifically listed in 40 CFR 433.10(a). If any of the core operations are performed, the new source metal finishing standards apply to discharges from any of the core or associated operations. As a result, the metal finishing standards apply to all process wastewater discharges to the sewers.

Basis of the Standards - The new source metal finishing standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, no discharge of cadmium-bearing wastewaters, and if necessary, cyanide destruction and chromium reduction. The best-available-technology standards were set where metal finishers with model treatment operated at a long-term average and variability that achieved a compliance rate of 99% (1 in 100 chance of violation).

Adjustments – Under 40 CFR 433.12(c), the cyanide standards must be adjusted to account for dilution from non-cyanide bearing waste streams. For Medallic Arts, since there are no cyanide-bearing wastewaters, the cyanide standards applied to IWD-MA1 default to the unadjusted limits. In addition, under 40 CFR 433.12, the self-monitoring requirements for total toxic organics may be replaced by self-certifications to following an approved toxic organics management plan. The total toxic organics standards continue to apply but monitoring is replaced.

Compliance Deadline - New sources were required to comply on the first day of discharge.

2.4 Federal Prohibitions

The Federal standards in 40 CFR 403.6(d) and 403.17(d) prohibit dilution as a substitute for treatment, and the bypassing of any on-site treatment necessary to comply with standards, respectively.

2.5 Point(s) of Compliance

No sampling point is established as of yet. When it is, it will have to be representative of the day-to-day non-domestic wastewater discharges. A sampling point sited at the floor drain sewer connection could serve as a representative sample point, both end-of-pipe for comparison with local limits and end-of-process-after-treatment for comparison with Federal standards. However, the sewer connection itself is not usable as a sample point because a representative sample cannot be obtained from a drain. It may be necessary to install a holding tank to capture all untreated and treated wastewaters for combined discharge to the sewers (designated in this report as IWD-MA1).



2.6 Compliance Sampling

Local limits and the national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples. The Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composite samples. The 24-hour composite samples can be replaced with single grabs or manually-composited grabs that are representative of the sampling day's discharge.

2.7 Pollutants of Concern

The pollutants of concern for Medallic Art comprise those regulated by the Federal standards, the national prohibitions, and certain site-specific pollutants for which there is a potential to cause the South Dayton Valley wastewater treatment plant to violate its NDEP permit or Federal sludge limits.

Federal Standards – The pollutant regulated by the metal finishing standards are cadmium, chromium, copper, lead, nickel, silver, zinc, cyanide (total or amenable), and total toxic organics.

National Prohibitions – The pollutant measures regulated by the national prohibitions would include pH for corrosivity, *40 CFR 403.5(b)(2)*.

Local Limits – Site-specific pollutants can cause violations of the NDEP permit or Federal sludge limits in two ways. First, the pollutants could cause an operational interference of the treatment works which results in either (1) the unauthorized release of untreated or partially treated sewage or (2) the violation of permit limits for pollutants that measure performance such as BOD. Second, the pollutants could pass-through the treatment works into either the WWTP sludge or the receiving waters at levels exceeding permit or regulatory limits. From this inspection, EPA determined that the pollutants of concern at Medallic Art likely include pH and total suspended solids as a risk of adversely affecting the treatment works, and copper and silver as a risk of pass-through.



3.0 Compliance with Federal Standards

Industrial users must comply with the Federal categorical pretreatment standards that apply to their process wastewater discharges. 40 CFR 403.6(b).

Categorical industrial users must comply with the prohibition against dilution of the Federally-regulated waste streams as a substitute for treatment. 40 CFR 403.6(d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

Summary

It is likely that a metal finisher like Medallic Art can comply with the full list of Federal metal finishing standards because the pollutants are generally entrained in suspensions and the treatment in-place is designed to remove suspended solids. Medallic Art employs two-stage treatment to remove suspended solids from the pumice polishing tail waters. The treatment in-place could also successfully handle the small volumes of other process-related wastewater discharges to the sewers. The two-stage treatment is equivalent in design to the best-available-technology (“BAT”) treatment used in setting the Federal standards. No definitive conclusions regarding compliance can be made until comprehensive sampling begins.

Requirements

- None.

Recommendations

- The vibratory deburring wastewaters should be directed through the batch treatment unit.
- Batch treatment should incorporate flocculant-aided settling for the discharge of clarified decant through the steel-wool cementation canister to the sewers.

3.1 Sampling Records

There are no sample results for Medallic Art. Composite sampling for all Federally-regulated pollutants from IWD-RA1, upon the installation of a final effluent holding tank, would be usable to determine compliance with the Federal BAT standards. Representative sampling over time also would require samples to be collected both on days when the discharge to the sewers consists of the treated pumice polishing wastewaters and on days when the discharge also includes the vibratory deburring tail waters. *See* sections 3.3 and 5.0 below.



3.2 Best-Available-Technology Treatment

Metallic Art usually discharges only batch treated pumice polishing wastewaters. The batch treatment is equivalent to the BAT models used in originally setting the Federal standards because it involves the metals precipitation resulting from alkaline pH adjustment followed by settling, although the settling is not chemical-aided. The treatment in-place is likely to perform better than BAT because it operates in batch mode, and also involves the further removal of silver through steel-wool cementation. However overall, the treatment-in-place falls short of fully providing BAT or equivalent treatment because vibratory burnishing tail waters are batch discharged untreated to the sewer.

Cyanide Treatment – No treatment is necessary since the process-related wastewaters do not contain cyanides.

3.3 Dilution as a Substitute for Treatment

The Federal standards in 40 CFR 403.6(d) prohibit "dilution as a substitute for treatment" in order to prevent compromising BAT model treatment with dilute waste streams. This prohibition specifically applies when sample results for a diluted waste stream are below the Federal standards and the apparent compliance is used to justify discharge without treatment. There are two conditions that need to be established in order to make a determination of non-compliance with this prohibition. First, some or all of the Federally-regulated wastewaters must discharge without undergoing BAT model treatment or its equivalent. Second, there must be some form of excess water usage within a Federally-regulated process.

Medallic Art meets the first condition of non-compliance since some of the Federally-regulated wastewaters are treated for metals. However, Medallic Arts does not meet the second condition since all wastewaters are generated on-demand.

3.4 Bypass Provision

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

There is no evidence of bypassing pumice polishing wastewaters of the treatment necessary to comply with standards. However, the infrequent discharge of vibratory deburring wastewaters could be processed through the existing batch treatment unit to remove entrained solids and dissolved silver.



4.0 Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

Summary

Compliance with the Federal requirements would be expected to also result in compliance with expected local and State limits. Discharges could, but are unlikely to, pose a risk of causing the pass-through of toxics to the receiving ground waters or the sludge. No definitive conclusions regarding compliance can be made until (1) technically-based local limits for the pollutants of concern are enacted in a permit and (2) comprehensive sampling begins.

Requirements

- None.

Recommendations

- None.

4.1 National Objectives

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

- (1) cause operational interference with sewage treatment or sludge disposal,
- (2) pass-through sewage treatment into the receiving waters or sludge,
- (3) are in any way incompatible with the sewerage works, or
- (4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by the Lyon County wastewater treatment plant through consistent compliance with their sludge and discharge limits.

4.2 Local Limits for Oxygen Demanding Pollutants and The National Prohibition Against Interference

The process-related wastewaters discharged to the sewers are not expected to be high enough in organics strength to pose a risk of interference, with wastewater strengths significantly less than domestic sewage.



4.3 Local Limits for Toxic Metals, Cyanide, and Other Pollutants and The National Prohibition Against Pass-Through

Federally-Regulated Pollutants – Compliance with the Federal standards would be expected to also result in compliance with local limits. Technically-based local limits for copper and silver would be expected because the NDEP permit for Lyon County limits these metals. *See* section 3.2 of this report.

Other Pollutants – No conclusions can be made since local limits have not been advanced for Medallic Art. Nevertheless, the risk of pass-through to the ground water from the Bruce Industries is expected to be negligible since the wastewaters discharge flow rates are so minimal, under 50 gpd.

4.4 Local Limits for pH and Sulfides, and The National Prohibitions Against Safety Hazards and Corrosive Structural Damage

Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are not expected because the treated wastewaters are not high-strength in biodegradable organics, and are adjusted through the treatment to not be acidic in nature.

4.5 Flammability

Flammability would not be expected because the discharges to the sewer are expected to entrain only negligible amounts of volatile organics.



5.0 Compliance with Federal Monitoring Requirements

Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).

Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) and 403.12(h).

Summary

As of yet, there is no sample record for Medallic Art and no established sample point accounting for and allowing the sampling of the entire discharge of non-domestic wastewaters to the sewers. A near minimum sample record would likely be statistically representative over the reporting period if the discharge consists only of batch treated pumice polishing waters. However, a statistical bias from other discharges results in an increase in the minimum number of samples necessary in order to account for all discharges.

Requirements

- See Appendix 2 for the expected self-monitoring requirements for the discharge from Medallic Art to the sewers.
- The self-monitoring must capture each type of treated batch discharge at least once per reporting period.

Recommendations

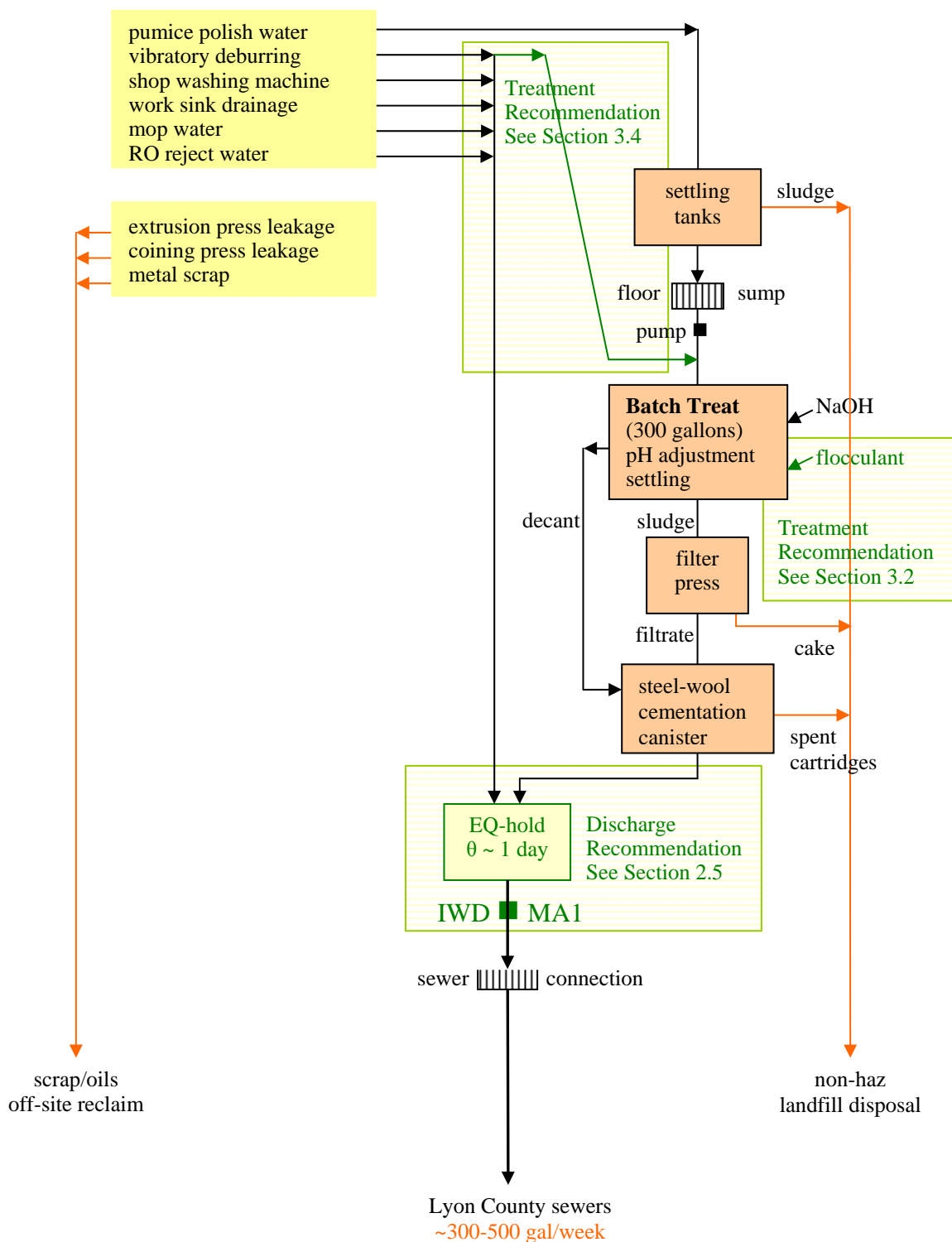
- See Section 2.5 of this report.



Appendix 1

Medallic Art Company

Schematic of the Wastewater Collection and Treatment





Appendix 2

Sewer Discharge Standards and Limits

Medallic Art @ IWD-MA1

pollutants of concern (mg/l)	Fed Categorical Standards (d-max) (mo-avg)		NDEP ⑦ Permit (d-max)	Nat'l ⑥ Prohibtns (instant)	Proposed LocLimits (instant)	Proposed Monitoring Frequency
flow (gpd)	-	-	-	-	-	quarterly
pH (s.u.)	-	-	-	<5.0 su.	5.5-10.0	quarterly
EC (μmohs/cm)	-	-	-	-	-	-
explosivity	-	-	-	① ②	-	-
oil&grease - petroleum	-	-	-	-	150	quarterly
sulfides	-	-	-	-	0.1	-
BOD/COD	-	-	-	-	1000	-
total suspended solids	-	-	-	-	1000	④
cadmium	0.11	0.07	-	-	③	quarterly
chromium	2.77	1.71	-	-	③	quarterly
copper	3.38	2.07	-	-	③	quarterly
iron	-	-	-	-	③	quarterly
lead	0.69	0.43	-	-	③	quarterly
mercury	-	-	-	-	③	④
molybdenum	-	-	-	-	③	④
nickel	3.98	2.38	-	-	③	quarterly
selenium	-	-	-	-	③	④
silver	0.43	0.24	-	-	③	quarterly
zinc	2.61	1.48	-	-	③	quarterly
total cyanide	1.20	0.65	-	-	③	twice-year
amenable cyanide	0.86	0.32	-	-	③	-
total toxic organics	2.13	-	-	-	③	twice-year
temperature (°F)	-	-	-	⑤	③	-

① National-prohibitions - Closed-cup flash point <140°F and pH <5.0 su.

② Narrative prohibition against the introduction of flammable or explosive substances

③ Potential technically-based local limits to be re-adopted to ensure POTW permit compliance.

④ As part of periodic priority pollutant scans in order to identify changes in discharge quality

⑤ National-prohibitions - Not causing >104°F at POTW's wastewater treatment plant

⑥ Prohibitions against interference, pass-through, obstruction, sludge contamination, groundwater contamination, objectionable odors, the release of toxic vapors or fumes, etc.

⑦ No NDEP permit